

In the Claims

Please amend the claims presented during the international phase as follows.

Applicant presents a full set of claims showing markups of the claims with insertions and deletions indicated by underlining and strikethrough text (or double bracketing), respectively.

1. (Original) A particle of TiO_2 or ZnO which has been doped with one or more other elements such that the concentration of dopant in a surface of the particle is greater than that at a core of the particle.
2. (Original) A particle according to claim 1 which is coated with a discontinuous layer of hydrophilic or hydrophobic material.
3. (Original) A particle according to claim 2 which is coated with hydrophobic polymer.
4. (Original) A particle according to claim 2 which is coated first with an oxide of aluminium, zirconium or silicon and then with a long chain carboxylic acid salt.
5. (Currently amended) A process for preparing a particle as claimed in claim 1 ~~any one of the preceding claims~~ which comprises placing a particle of TiO_2 or ZnO in contact with a solution or suspension of a salt of the dopant for a time insufficient for the concentration of dopant salt in the core of the particle to reach that at its surface and then baking the resulting particle.
6. (Currently amended) A process according to claim 5 wherein the particle is baked ~~based~~ at a temperature of at least 500°C .
7. (Currently amended) A particle according to claim 1 that is ~~any one of the claims 1 to 5~~ whenever prepared by placing a particle of TiO_2 or ZnO in contact with a solution or suspension of a salt of the dopant for a time insufficient for the concentration of dopant salt in the core of the particle to reach that at its surface and then baking the resulting particle a process as claimed in any one of claims 5 or 6.

8. (Original) A UV sunscreen composition suitable for cosmetic or topical pharmaceutical use which comprises: (a) one or more organic components which are photosensitive and/or which are susceptible to degradation by another ingredient of the composition and/or by undoped TiO_2 and/or by undoped ZnO ; and (b) TiO_2 and/or ZnO which has been surface doped with one or more other elements.
9. (Original) A composition according to claim 8 which is an aqueous formulation and the TiO_2 and/or ZnO is only surface doped.
10. (Currently amended) A composition according to claim 8 [[or 9]] which is an oily formulation.
11. (Currently amended) A composition according to claim 8 [[or 9]] which is an oil-in-water or water-in-oil formulation.
12. (Original) A composition according to claim 11 wherein the TiO_2 and/or ZnO is present in both phases.
13. (Currently amended) A composition according to claim 8 ~~any of claims 8 to 12~~ wherein the TiO_2 and/or ZnO is coated with a discontinuous layer of hydrophilic or hydrophobic material.
14. (Original) A composition according to claim 13 wherein the TiO_2 and/or ZnO is coated with a hydrophobic polymer.
15. (Original) A composition according to claim 13 wherein the TiO_2 and/or ZnO is coated first with an oxide of aluminium, zirconium or silicon and then with a long chain carboxylic acid salt.
16. (Currently amended) A composition according to claim 8 ~~any of claims 8 to 15~~ wherein one or more of the said organic components is a UV sunscreen agent.
17. (Original) A composition according to claim 16 wherein the organic sunscreen agent absorbs UV light in the UVA region.

18. (Currently amended) A composition according to claim 16 [[or 17]] wherein the organic sunscreen agent is a paraaminobenzoic acid, ester or derivative thereof, a methoxy cinnamate ester, a benzophenone, a dibenzoylmethane, an alkyl-p-p-phenyl acrylate, a triazine, a camphor derivative, an organic pigment, a silicone based sunscreen agent or 2-phenylbenzimidazol-5 sulphonic acid or phenyldibenzimidazol sulphonic acid.

19. (Currently amended) A composition according to claim 8 ~~any of claims 8 to 18~~ which contains one or more of a fatty substance, organic solvent, silicone, thickener, demulsant, UVB sunscreen agent, antifoaming agent, moisturising agent, perfume preservative, surface activation filler, sequestrant, anionic, cationic, nonionic or amphoteric polymer, propellant, alkalising or acidifying agent, colourant or metal oxide pigment.

20. (Currently amended) A composition according to claim 8 ~~any of claims 8 to 19~~ which is a sunscreen.

21. (Currently amended) A method for reducing the concentration of one or more organic UV sunscreen agents or other ingredient which is photosensitive and/or is degraded by another ingredient in a UV sunscreen composition comprising incorporating into the composition ~~Use of a doped TiO₂/ZnO as defined in claim 1 any preceding claim~~ to reduce the concentration of one or more organic UV sunscreen agents or other ingredient which is photosensitive and/or is degraded by another ingredient in [[a]] the UV sunscreen composition.

22. (Currently amended) A process for increasing the effectiveness of an organic UV sunscreen composition which comprises one or more components which are photosensitive and/or are susceptible to degradation by another ingredient of the composition and/or by undoped TiO₂ and/or by undoped ZnO, which process comprises incorporating into the composition a doped TiO₂/ZnO as defined in claim 1 ~~any preceding claim~~.

23. (Currently amended) A process for reducing the production of a toxic compound in a UV sunscreen composition which process comprises incorporating therein doped TiO₂ and/or ZnO as defined in claim 1 ~~any preceding claim~~.

24. (Original) A composition which comprises an amount of one or more organic or inorganic components which are photosensitive and/or which are degraded by another ingredient of the composition and an amount of TiO_2 and/or ZnO which has been doped at least on or in a surface thereof with one or more other elements.
25. (Original) A composition according to claim 24 which has a rate of deterioration of a UV light-sensitive physical factor at least 5% less than that of a composition having the same formulation except that it does not contain the said TiO_2 and/or ZnO which has been doped with a second element.
26. (Original) A composition according to claim 25 wherein the physical factor is tensile strength.
27. (Original) A composition according to claim 25 wherein the physical factor is colour.
28. (Currently amended) A composition according to claim 8 ~~any of claims 8 to 27~~ which contains TiO_2 and/or ZnO which has not been doped, optionally as TiO_2 and/or ZnO particles which have not been doped.
29. (Original) A composition according to claim 28, wherein the said TiO_2 and/or ZnO is present as pigment.
30. (Original) A composition according to claim 8 ~~any of claims 8 to 29~~ in the form of a coating on and/or an additive in a polymeric material, which material is thermoplastic, or thermosetting or photosensitive.
31. (Currently amended) A composition according to claim 8 ~~any of claims 8 to 30~~ which is in the form of a three dimensional article, or is in the form of a film, or is in the form of a photographic film, or is in the form of a coating composition, or is in the form of a paint or varnish.
32. (Original) A self-supporting polymeric composition intended to protect a composition adjacent thereto from the adverse effects of light which comprises TiO_2 and/or

ZnO which has been doped at least in or on a surface thereof with one or more other elements or reduced ZnO.

33. (Original) A composition according to claim 32 wherein the TiO₂ and/or ZnO is present in a surface layer.

34. (Original) A composition according to claim 33 wherein a non-surface layer thereof is not wood.

35. (Currently amended) A composition according to claim 33 [[or 34]] wherein a non-surface layer thereof is synthetic.

36. (Original) A varnish composition which comprises TiO₂ and/or ZnO which has been doped at least in or on a surface thereof with one or more other elements or reduced ZnO.

37. (Currently amended) A composition according to claim 32 ~~any one of claims 32 to 36~~ which has ~~one or more of the features of~~ a rate of deterioration of a UV light-sensitive physical factor at least 5% less than that of a composition having the same formulation except that it does not contain the said TiO₂ and/or ZnO which has been doped with a second element ~~claims 25 to 31~~.

38. (Currently amended) A method for reducing the concentration of one or more light stabilisers in a polymeric composition comprising incorporating into the composition ~~Use of~~ a surface doped TiO₂/ZnO as defined in claim 1 ~~any preceding claim~~ to reduce the concentration of one or more light stabilisers in [[a]] the polymeric composition.

39. (Currently amended) A method for reducing the rate of deterioration of a light-sensitive physical factor in a polymeric composition comprising incorporating into the composition ~~Use of~~ a surface doped TiO₂/ZnO as defined in claim 1 ~~any preceding claim~~ to reduce the rate of deterioration of a light-sensitive physical factor in [[a]] the polymeric composition.

40. (Currently amended) A process for improving stability of a physical factor of a polymeric composition, which comprises one or more components which are photosensitive

and/or are degraded by another ingredient of the composition which process comprises incorporating into the composition a surface doped TiO_2/ZnO as defined in claim 1 ~~any preceding claim~~.

41. (Original) A composition suitable for veterinary, agricultural or horticultural use which comprises at least one organic veterinarily, agriculturally and/or horticulturally active compound, and titanium dioxide and/or zinc oxide which has been doped at least in or on a surface thereof with one or more other elements.

42. (Original) A composition according to claim 41 wherein the active compound is a herbicide, fungicide, insecticide, acaricide, miticide or rodenticide.

43. (Original) A composition suitable for household use which comprises at least one organic biocide, and titanium dioxide and/or zinc oxide which has been doped at least in or on a surface thereof with one or more other elements.

44. (Currently amended) A ~~composition or particle or process or use~~ according to claim 1 ~~any preceding claim~~ wherein the dopant is manganese, selenium, cerium, chromium, vanadium or iron.

45. (Currently amended) A ~~particle or composition or process or use~~ according to claim 1 ~~any preceding claim~~ wherein the dopant is Mn^{2+} or other manganese, or is V^{4+} .

46. (Currently amended) A ~~composition or particle or process or use~~ according to claim 1 ~~any preceding claim~~ wherein the dopant is present in an amount from 0.05 % to 10 mole %.

47. (Original) A ~~composition or particle or process or use~~ according to claim 46 wherein the dopant is present in an amount from 0.5 to 2 mole % by weight.

48. (Currently amended) A ~~composition or particle or process or use~~ according to claim 1 ~~any preceding claim~~ in which the doped oxide is doped titanium dioxide.

49. (Currently amended) A ~~composition or particle or process or use~~ according to claim 1 ~~any preceding claim~~ wherein the titanium dioxide is in rutile form.

50. (Currently amended) A composition ~~or process or use~~ according to claim 8 ~~any of claims 8 to 49~~ which contains reduced zinc oxide.

51. (Currently amended) A composition according to claim 8 ~~any preceding composition claim~~ which comprises 0.5 to 20 mole % by weight of the doped titanium dioxide and/or zinc oxide.

52. (Currently amended) A ~~composition or particle or process or use~~ according to claim 1 ~~any preceding claim~~ wherein the doped or reduced oxide has a particle size from 1 to 200 nm, preferably 1 to 100 nm; or from 100 to 500 nm.

53. (Original) A composition according to claim 42 wherein the active compound is an insecticide.

54. (Currently amended) A composition according to claim 8 ~~any preceding composition claim~~ which contains one or more of a filler, organic solvent or surfactant.

55. (Currently amended) A composition according to claim 8 ~~any preceding composition claim~~ which is in the form of an aqueous or non-aqueous liquid, a powder, granules or tablet.

56. (Currently amended) A method for reducing the concentration of one or more
veterinarily, agriculturally and/or horticulturally active compounds in a composition suitable
for veterinary, agricultural, horticultural or household use comprising incorporating into the
composition Use of a surface doped TiO₂/ZnO as defined in claim 1 ~~any preceding claim~~ to
reduce the concentration of one or more veterinarily, agriculturally and/or horticulturally
active compounds in [[a]] the composition suitable for veterinary, agricultural, horticultural
or household use.

57. (Currently amended) A method for increasing the shelf life of one or more
veterinarily, agriculturally and/or horticulturally active compounds in a composition suitable
for veterinary, agricultural, horticultural or household use comprising incorporating into the
composition Use of a surface doped TiO₂/ZnO as defined in claim 1 ~~any preceding claim~~ to
increase the shelf life of one or more veterinarily, agriculturally and/or horticulturally active

compounds in [[a]] the composition suitable for veterinary, agricultural, horticultural or household use.

58. (Currently amended) A process for increasing the effectiveness of a composition suitable for veterinary, agricultural, horticultural or household use which process comprises one or more organic veterinarally, agriculturally or horticulturally or household active compounds, which comprises incorporating into the composition a surface doped TiO_2/ZnO as defined in claim 1 ~~any preceeding claim~~.

59. (Currently amended) A process for treating an agricultural or horticultural species at a locus which process comprises treating the locus with a composition as claimed in claim 41 ~~any preceeding composition claim~~.

60. (Currently amended) A particle ~~or composition or process or use~~ according to claim 1 ~~any preceeding claim~~ in which the mole ratio of dopant to host metal at the surface is 2-25 to 98-75.

61. (Original) A particle ~~or composition or process or use~~ according to claim 60, in which the mole ratio of dopant to host metal at the surface is 8-75 to 92-25.

62. (Currently amended) A particle ~~or composition or process or use~~ according to claim 1 ~~any preceeding claim~~ in which the concentration of dopant in a surface of the particle is greater than in the bulk of the particle.

63. (Currently amended) A particle ~~or composition or process or use~~ according to claim 1 ~~any of claims 1 to 61~~ in which there is no dopant at the core of the particle and/or in the bulk of the particle.

64. (Currently amended) A particle ~~or composition or process or use~~ according to claim 1 ~~any preceeding claim~~ in which a dopant is present in the bulk of the particles, and wherein the bulk dopant is different from the or each surface dopant.

65. (Canceled)